

Meiden High Power Testing Laboratory Received ISO/IEC 17025 Certification

1. Accreditation Acquisition for our High Power Testing Laboratory

We have the short-circuit testing facilities where we conduct tests on circuit breakers, power transformers, lightning arresters, switch-gears, and such substation and power distribution equipment by actually applying high currents. Short-circuit testing is quite a special test that requires a large-scale facility. The number of high power laboratory capable of a certain high level test is very limited at home and abroad. Our High Power Laboratory has accumulated a variety of test data used for the type testing of our products. Recently, however, we received inquired from our customers to clarify the reliability level of the test results as a part of product evaluations by customers.

In this connection, based on the International Standard of ISO/IEC 17025, Meiden High Power Testing Laboratory acquired the certificate as a standard compliant testing facility in May 2014 from Japan Accreditation Board (JAB). This accreditation acquisition shows that the laboratory has the neutrality and testing capability of testing facility and it is above a generally accepted ability level. As such, we can furnish the test data with improved reliability than ever. For the acquiring the certificate, we worked really hard to secure traceability especially for high current and high voltage measurements, and we focused in establishing uncertainty evaluation in measuring systems including optical link.

The scope of the certificate covers the short-circuit tests, the single phase and double-

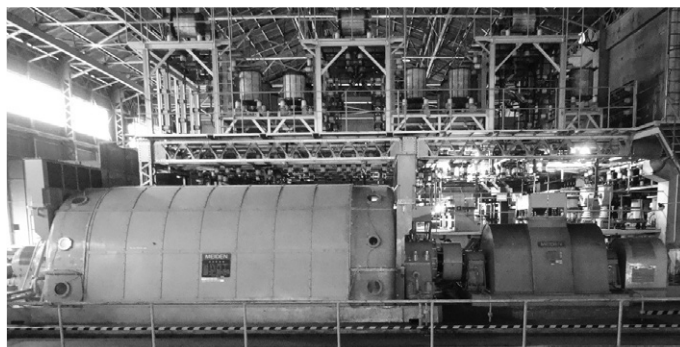
earth fault test and out-of-phase tests, the short-time withstand current and peak withstand current tests, and the arc tests.

2. Coordination with Other Major Testing Laboratories

The Short-Circuit Testing Liaison (STL) is an organization where major short-circuit testing laboratories in the world are participating. The STL is working on to perform the unified testing practices based on the testing standards and being a member of the STL is regarded as a de facto standard requirement in the high-power testing laboratories. The Japan Short Circuit Testing Committee (JSTC) is taking part in the STL and our High Power Laboratory is registered as a full member laboratory for the STL together with the title of a member laboratory for the JSTC. To secure the traceability for high current measurements, we are joining in a round-robin comparison test program with an STL reference shunt.

3. Testing Facilities

Our testing facilities consist of possess a short-circuit generator (1000MVA-14kV-50Hz), a large-current transformer for withstand current test (3.6kV/600V-5MVA), synthetic testing facilities to allow short circuit tests at high voltages.



Short Circuit Generator (1000MVA-14kV-50Hz)



Accreditation Certificate

Meiden Group Joins the OBP V2X Project, Osaka

Meiden Group takes part in the V2X Project. We started the technical verification test program in the Osaka Business Park (OBP). OBP is full of natural environment of water and woods resources and it is adjacent to the Osaka Castle Park.

The OBP V2X Project is a demonstrative research project to verify the next-generation energy technologies supported by Ministry of Economy, Trade and Industry. It is an experimental research project to verify a power supply system effectively Electric Vehicles (EVs) and Plug-in Hybrid Electric Vehicles (PHEVs). Our tasks under this project involve the development of charging and discharging station system which can handle the charging and discharging of five EVs (EV and PHEV) at the same time. This is a first achievement in Japan. Utilizing the car battery of EV and PHEV, we verify the effectiveness in power supply such as load leveling in buildings and peak-shaving, and verification of power supply effectiveness in the case of disasters and occurrence of power outage.

The "V2X" is a letter symbol for "Vehicle to X." "Vehicle" means an automobile and "X" denotes an office building or a condominium building. It implies a wider application possibility.

This project is actually promoted by a leading firm, MID Urban Development Co., Ltd., a general real estate company. The key sponsors are: Nikken Sekkei Research Institute, Takenaka Corporation, The Kansai Electric Power Co., Inc., IKS Japan Co., Ltd., and Osaka Businesspark Development Steering Committee.

For this project, Meiden Group received an order in Fiscal 2013 for the development of two systems: the Energy Management System (EMS) and for Booking and Billing System (BBS) for charging and discharging station.

The EMS monitors the power consumption amount of the designated in buildings and also GPS information and battery level of designated EVs on the move. It performs load leveling and power peak-shaving for the designated buildings by sending a command information of designated EV cars charge-discharge timing at the charging and discharging station. It also supplies power to internal facilities of the buildings such as lifts, lighting, and air conditioners in the case of a power outage caused by a disaster. This system has been developed by three Meiden Group firms: Meidensha Corporation, Meiden Engineering Corporation, and Meiden Engineering West Japan.

The BBS is used to manage the booking of charging and discharging station for EVs and PHEVs and to set up time zone charge/discharge rates for the billing. This system has been jointly developed by Meidensha Corporation, Meiden System Solution Corporation, and Meiden Engineering Corporation.

The technical verification test was started on 1 July 2014, and will be continued for two years until the end of Fiscal 2015 (March 2016). During the period, we will do field data collection, data analysis, and system improvement. We will work on to build the EMS that can fit the designated area.



Situation of Power Utilization and Charge/Discharge PCS



A Screen of EV Stand Reservations



Charge/Discharge Equipment Touch-Panel